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Bruce Halstead, US Fish and Wildlife Service
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RECEIVED

US Fish and Wildlife Service
CCFOW, Arcata, CA

Dear Mr. Halstead,

I am writing to you regarding the Pacific Lumber Company Sustained Yield Plan/Habitat Conservation Plan and EIS/EIR, or Permit numbers PRT-828950 and 1157.

I am a Spotted Owl biologist, with formal training in Ecology from the University of California at Davis. My graduate research, funded by USFS Pacific Southwest Research Station, was on the diet of the California Spotted Owl in the forests of the Sierra Nevada. I have carefully read the Northern Spotted Owl Conservation Plan (Volume IV, Part C) in PALCO's SYP/HCP on CD-ROM and below is a list of my main concerns with the Plan.

1. Viable Populations of NSO

- The authors of the HCP estimate that the baseline level of NSOs is at 150 pairs, yet they readily admit in the same paragraph that the baseline level is "currently unknown" (p. 11). Furthermore, the Plan indicates that PALCO will manage the forest so as to keep owl populations above 67% of the baseline level. However, the Plan also states that PALCO will manage the forests in such a way that "...approximately 93 pairs would...have their nesting needs met." These figures are inconsistent because 67% of 150 is 101, so PALCO *will* be managing for less than 67% of the baseline level under the Plan. How can PALCO conduct surveys to determine what the real baseline levels are *while* they are logging extensively in the first five years of the plan? How will PALCO determine whether NSO "nesting needs" are met? In addition, what if surveys reveal that the baseline level of owls actually exceeds 150 pairs? Will PALCO increase the number of pairs that would have their nesting needs met? This is never addressed in the Plan, but must be considered as the Plan cannot be changed for 50 years.
- The methodology that PALCO uses to survey for owl is flawed, as well. Although it is never mentioned in the NSO Conservation Plan, the Volume I summary of the Plan states that NSO "surveys will be conducted between sunset and sunrise" (p. 54). Owls are the most active during that time interval. At sunset, owls tend to leave their roost and/or nest sites to start foraging anywhere in their home range (which may be up to 1000 acres according to the Plan). Thus, this is an ineffective method to determine owl presence and nesting status. PALCO must conduct surveys shortly *before* sunset and *after* sunrise to catch the owls in their roost and/or nest sites. This may explain why their surveys of 20 owl sites indicated that the sites are inactive (see #5 below). The owls could very well have been foraging elsewhere when the sites were surveyed.
- The Plan also claims that PALCO's conservation strategy will "seek to conserve viable populations of the NSO"... "throughout the life of the Plan" (p. 1). PALCO has never attempted to determine what viability really means and the Plan falls short of meeting any kind of calculated minimum viable population simply because studies have never been done. According to Michael Soule's *Viable Populations for Conservation*, viability must take

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factors such as environmental variation, genetics, metapopulation structure, catastrophes, and fragmentation into account (1983). Furthermore, there are no magic numbers for ensuring viability of a species. It is unclear what the scientific reasoning is for PALCO picking 67% of the unknown baseline level as being a critical threshold. Obviously, this HCP does not utilize the best science available as is required under Section 7 of the Federal ESA. Without real data, appropriately acquired, USFWS cannot make a determination of whether PALCO's logging activities under the Plan will "appreciably reduce the likelihood of the survival and recovery of the species in the wild" (Section 10, Federal ESA).

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2. NSO Habitat Requirements

- Also on page 1, the Plan states that "the habitat requirements of the NSO are present throughout the life of the Plan." The Plan does not explain how it will ensure that habitat requirements for NSO will be present throughout the life of the Plan. Instead, the Plan offers conflicting accounts of what the NSO requires for nesting and foraging. First of all, sources of information cited extensively in the Northern Spotted Owl Conservation Plan are not cited in the Literature Cited section (pp. 22-24), such as Folliard (1993), Thome (1997), Harris (1996), and Kerns (1989). Such sources are relied upon for crucial pieces of information on habitat recommendations for NSOs, yet it is impossible for scientists reviewing the Plan to check on the sources. For example, the Plan states that according to Thome (1997), NSO reproductive "success was lower in the largest, oldest stands present" and "the highest fecundity [i]s related to stands 21-40 years old" (p. 2). This is inconsistent with literature published in peer reviewed journals. Forsman et al. (1984) found that NSOs prefer to forage in unlogged old growth forests. In fact, he found that NSOs would fly long distances to patches of old growth forest for foraging, if necessary. Forsman et al. also notes that it is difficult for NSO to forage in young forests or forest openings because they cannot attack prey species when the forest floor is covered in scrubby plant species. Over 90% of the NSOs preferred to roost in old growth and over 90% nested in old growth forests with at least 69% canopy closure (Forsman et al. 1984). Finally, Rosenberg and Anthony (1992) determined that "homogenous canopies in second-growth forests may reduce flight maneuverability and the ability of owls to capture prey." The Plan must include citations from peer reviewed journal articles rather than rely on internal surveys which may not be scientifically sound. It seems like PALCO plans on utilizing the NSO habitat requirement recommendations of Folliard (1993) and Thome (1997) despite the fact that their recommendations do not corroborate with the literature.

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3. NSO Diet

- The Plan cites that Kerns' (1989) study of NSO found brush rabbits and dusky footed woodrats to make up a majority of the diet. This study was only conducted in 1989. This is not long enough to definitively suggest that the data collected is representative of what all NSO eat because of the number of variables involved, such as season, weather, number of owl diets sampled, habitat type, etc. Diet studies by Cutler and Hays (1991), Forsman et al. (1984), and Barrows (1980) all yielded very different data than Kerns. PALCO uses the dusky footed woodrat and brush rabbit information to conclude that NSO prefer to forage in young forests because they associate these species with young forests. On page 4, the Plan states "the important role of the early successional species... as prey species of the NSO became apparent" after the 1989 study. Raphael (1988 and 1987), however, found that dusky footed woodrats are most abundant in very young forests *and* in old growth forests. In addition, Zabel et al. (1995) found that radio-tagged woodrats "moved > 50 m into old growth stands adjacent to their shrubland home ranges" and that even the home range of owls preying mostly on woodrats consisted of late successional and old growth forests.

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- The Plan also erroneously claims that Zabel et al. (1995) found that “NSOs preying on woodrats tend to have...higher reproductive rates than exhibited by the species elsewhere” (p.1). Zabel et al. never mention reproductive rates in their study. They concentrated on home range size and habitat use patterns associated with diet. PALCO needs to conduct scientific surveys that last longer than one year to determine diet and reproductive success rather than jumping to conclusions that justify the taking of NSO habitat.

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4. Home Range Size

- Another hastily drawn conclusion by PALCO is that the home range of NSO on PALCO lands is about 1000 acres. This figure was based on one field season in which PALCO admits to having “problems with [radio] transmitter failure” (p.4). The source, again, cannot be found in the Literature Cited section of the Plan and very little information is offered. PALCO cites the figure as being consistent with what Zabel et al. (1995) found, but it took a two year study on many owls in three different study areas for Zabel et al. to reach conclusions on NSO home range size. Forsman et al. (1984), however found that the home range of the NSO increases with decreasing quality of habitat. Again, where are the methods used from which they draw these conclusions? PALCO needs to conduct scientific surveys in an effort to determine home range. This will take more than one season.

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5. Impacts on NSO from PALCO Activities – Minimization and Mitigation

- The Plan will directly and indirectly impact NSO nesting, foraging, and/or roosting on PALCO lands. Table 3 (volume IV, p. 12), shows that in the first 20 years under the Plan, PALCO will eliminate approximately 50% of the high quality nesting habitat of the NSO, 85% of the medium quality nesting habitat of the NSO, and 50% of the foraging habitat of the NSO. During this time, the amount of low quality nesting habitat will increase by 20%. This is not minimizing the taking of NSOs. This 50-year Plan may indeed reduce the likelihood of the survival and recovery of the NSO in the wild *in the first 20 years*. This is in clear violation of Section 10 of the Federal ESA. In addition, the Plan violates Section 7, which states that the Plan should not “jeopardize the continued existence of any endangered species...or result in the destruction or adverse modification of habitat...determined...to be critical.” The Plan will undoubtedly jeopardize the NSO “by reducing the reproduction, numbers, or distribution” of this listed species (50 CFR 402.02).
- Also, in page 6, the Plan states that the incidental take permit only covers “harvesting of 16 known inactive owl sites and impacts to NSO habitat...during the first five years of the Plan.” After this brief time period, PALCO has a permit to “incidentally” take any NSO sites with essentially no limitations. This certainly promises to jeopardize the NSO. PALCO cannot assume that just because a site is inactive that NSO will not return. Forsman et al. (1984) found that NSO would frequently reuse sites for nesting. I also found this to be the case with California Spotted Owls in the Sierra Nevada. Owls may leave the site for a year or two, but they generally return because they have high site fidelity. Again, PALCO’s survey methods lack credibility.
- The Plan will allow retention of only 10% of PALCO lands “as suitable NSO nesting habitat” (p. 10), despite the fact that this includes PALCO’s High, Medium, and Low Suitability Ratings. Ten percent of that 10%, however must be late seral stage forest. This is truly inadequate for an endangered species that not only prefers old growth forest, but under the law requires federal protection. The purpose of listing endangered species is to eventually take them off of the endangered species list, not to facilitate their extinction. This Plan promises to do just that.

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- The Plan claims that "dispersal habitat and corridors for juveniles... will be maintained through these young forest types" (p. 11). It is unsafe for vulnerable juveniles to use young forests for dispersal due to risk of predation. Furthermore, because juvenile owls lack agility, they simply may not be able to maneuver in such forests, rendering this type of habitat ineffective as corridors or for dispersal.
- Mitigation is never directly addressed in the Plan. I think the Plan erroneously relies on the Headwaters Reserve, which has nothing to do with the HCP. Since PALCO will sell the Reserve outright to the U.S. and California, it should not be considered mitigation. PALCO should be mitigating on PALCO owned lands; otherwise it should not be mitigation under this Plan.

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After reading other parts of the HCP, in addition to the Northern Spotted Owl Conservation Plan, I have to conclude that this Plan is garbage. The Northern Spotted Owl will *not* be protected under this Plan. NSO in northern California obviously depend on old growth forests for survival and reproduction (there are countless peer reviewed journal articles attesting to this). Since few large tracts of old growth forest exist in this region, it is imperative that every effort is made on the part of the USFWS to protect what remains to ensure survival of old growth dependent species, such as the NSO and Marbled Murrelet. If this Plan is approved as written, NSO habitat will be significantly reduced in northern California. If this Plan is approved as written, the number of NSOs on PALCO lands will certainly diminish. It is not possible to destroy 50% of high quality nesting habitat and 50% of foraging habitat and still minimize impact on this species. In addition, PALCO has no real mitigation plans on their lands.

The USFWS should not approve of any PALCO SYP/HCP *unless* it contains scientific data on the target species that has been systematically collected for at least five years. This will yield baseline data that can assist PALCO in really managing the forest so as to minimize impact on NSO. A USFWS approved Plan must be a professional scientific document written for the purpose of protecting a species from extinction rather than facilitating its extinction through wanton habitat destruction. My opinion is that this Plan is written in a slipshod and hasty manner. Mr. Halstead, I hope you will concur.

Sincerely,



Joyce L. Kadoch

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EDUCATION

- University of California, Davis
Professional California Clear Single Subject Teaching Credential in Life Science, completed June 1998
- University of California, Davis
MS in Ecology, with an emphasis in conservation biology, completed June 1997
- University of California, Davis
BS in Environmental Biology, with an emphasis in conservation, completed June 1993

THESIS TITLE

Diet and Behavior of the California spotted owl in the southern Sierra Nevada

TEACHING EXPERIENCE

Science Teacher, San Jose Middle School, Novato Unified School District 8/98-present: Responsibilities include teaching four sixth grade general science classes and two seventh grade general science classes; integrating a creek study project and garden project into curricula at both grade levels; incorporating project-based learning and technology into the classroom.

Teaching Assistant, UC Davis. 9/94-12/94; 1/96-3/96; 1/97-3/97: Conducted discussion sections for a course on how public lands are managed by federal agencies (BLM, USFS, USFWS, NPS) in light of their different backgrounds, planning processes and mandates.

Teaching Assistant, UC Davis. 9/95-12/95; 3/97-6/97: Conducted bi-weekly labs for an introductory biology course focusing on vertebrate phylogeny, morphology, and comparative anatomy; gave lectures in lab.

RESEARCH AND RELATED EXPERIENCE

Graduate Research (Post-graduate Res. Asst I) - U.C. Davis 4/95-9/95, 4/96-9/96: With grant from USFS Pacific Southwest Research Station (PSW), designed thesis research project (including budget development and allocation); collected regurgitated California spotted owl pellets from nest and roost sites; analyzed contents of pellets, keying prey items to species when possible; recorded behavioral observations of owls at their roosts and nests; trapped mammals commonly found in pellets for relative indices of abundance; performed statistical analyses of data using SAS; conducted extensive literature search on subject; wrote progress reports and thesis for USFS PSW and UC Davis.

Biological Technician (GS-404-05) - Bureau of Land Management--Caliente Resource Area, Bakersfield, CA 4/94-9/94: Responsibilities included field inventory and monitoring of the status and habitat availability of San Joaquin Valley threatened and endangered plants and wildlife, monitoring livestock use and range conditions, primarily in the San Joaquin Valley, Carizzo Plain Natural Area, and Lake Isabella areas; used GPS to map locations of roads and endangered plants; assisted with raptor banding; assisted with project implementation and preparation of planning documents; riparian impact monitoring.

Volunteer Biological Assistant - Endangered Species Recovery Project, Turlock, CA 1/94-4/94: Duties included assisting with a census of giant kangaroo rats in the Carizzo Plain Natural Area, which entailed setting Sherman live traps, collecting data on trapped rodents (i.e. checking for Pitt and ear tags, determining age, weight and sex), taking detailed field notes, and using GPS to map giant kangaroo rat habitat.

Wildlife Biologist (GS-486-05) - U.S. Forest Service, Tahoe NF, Sierraville, CA 6/93-9/93: Responsibilities included surveying for California spotted owls, including establishing call points and mapping suitable habitat; surveying for northern goshawks, willow flycatchers and great gray owls according to USFS protocol; taking accurate field notes; evaluating vegetation plots for snag retention in order to determine habitat suitability for wildlife; following up on wildlife sightings in the district; building wildlife shelters in logged areas; writing and editing technical reports (e.g. biological evaluations).

Group Study Project - UC Davis 1/93-6/93:

Involved in research project through the Wildlife, Fisheries and Conservation Biology Department on population monitoring and nesting behavior of the Swainson's hawk; responsible for designing project methods, locating and monitoring nests, observing behavior at the nest including interspecific and intraspecific interactions, recording data in field notebook and analyzing data.

HONORS AND PROFESSIONAL AFFILIATIONS

National Science Teachers Association

California Science Teachers Association

Nominated for a Teaching Award for Outstanding Graduate Student, 1996 and 1997

Society for Conservation Biology

American Ornithologists' Union